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Preparations For Winter

I don't like things left until the last minute, particularly when you positively know that cold weather is surely coming and we might have frost in October and surely in November. Maybe you have someone to put up your storm windows, add antifreeze to your boat engine or your car, get your boots, gloves, scarves, sleds, and skis down from the attic, cook your Thanksgiving turkey, and do your Christmas shopping; but I will bet that you have to prepare your bee colonies for the winter all by yourself! Hence, let me help you by telling you WHAT I do and give you the REASONS why I do it.

STORES: In our Maryland weather, I like to have 70 pounds of honey on the colony before November 1st. If we have a long winter of continuous cold and very few days of temperatures over 50 degrees, 70 pounds of honey is more than enough to last until the spring nectar flow. However, if we have one of these "warm" winters where the temperature goes up and down like a yo-yo and there are quite a few days that the temperature goes over 50 degrees or even 60 or 70, this is very stressful on the bees and they break cluster and have to re-cluster, even start early brood rearing, go out on cleansing flights, fly long distances hunting nectar or pollen for brood rearing, and all this activity really uses of 70 pounds of honey rapidly, even requiring additional feeding in late winter. Many beekeepers depend on the fall flow of goldenrod and/or aster honey for winter stores. However, it is not unusual that these two floral sources don't yield nectar some years, but this honey crystallizes rather quickly which makes it poor quality for winter stores. I much prefer feeding heavy (2:1) sugar syrup for winter stores because it will remain liquid and the absence of certain minerals found in the fall honeys lessen the chance of dysentery with the bees. What could be worse than loose bowels when it is too cold to go outside for a cleansing flight? Heavy (2:1) sugar syrup is 10 pounds of granulated sugar dissolved in 5 pints of BOILING water (and that water has to be really boiling to dissolve the sugar (not just hot water, but 212 degree BOILING water). I cheat a little bit (just to make the job slightly easier) by dissolving 15 pounds sugar (3 five pound bags) in 1 gallon of BOILING WATER. (1 gallon = 8 pints = 8 pounds of water). DON'T EVER FEED YOUR BEES ANY HONEY EXCEPT YOUR OWN HONEY, because it might be filled with American Foul Brood spores! (Most commercial honey is loaded with AFB bacteria, because the bees are normally treated with Terramycin which just hides the AFB symptoms, but does not CURE AFB. That is why I hate Terramycin and refuse to use it.)

How much is 70 pounds of Honey? Depending on the thickness of the comb, a deep frame holds about 6 pounds of honey, so your colony needs about 12 deep frames of honey to equal 72 pounds. If you keep your bees in all Illinois boxes (with 6 1/4" frames) like I do, each frame holds about 4 pounds of honey, so you need about 18 frames to make 72 pounds of honey.

Let me mention something rarely mentioned. CLUSTERED bees move UP, but have difficulty spreading sideways. Hence, it is far wiser to have all FULL frames of honey

stored near the center of the hive, like frames 3,4,5,6,7,&8 of each box, while frames 1,2,9,&10 of each box are empty or partially filled.

Another fact: a colony of 2 deep bodies ready for winter should have a gross weight of about 130 pounds, whereas a colony of 3 Illinois boxes ready for winter should have a gross weight of about 145 pounds.

Don't wait for cold weather when the bees can NOT cure or properly distribute their stores in the colony space. If you are going to use 2:1 sugar syrup, start feeding in the warmth of September, so the bees can handle it properly!

TREATMENTS: I assume that you have followed my advice and installed 50 grams of MENTHOL in the brood chamber between August 15th and August 31st. As I have clearly stated, installation AFTER August is usually NOT EFFECTIVE, because the temperature is not warm enough to convert the solid menthol into a gas (vapor) that the bees breathe to kill the microscopic tracheal mites in their lungs. If you find your colony dead in late December or January, but the hive still has plenty of honey, there is a 90% chance that your bees died of tracheal mite infestation; and you will remember in future years to install menthol in August to kill the mites. Although September is very, very late to start treating with grease patties in place of menthol, because the cost is so small, you might try. Just make a "big hamburger" pattie from 2 parts of granulated sugar mixed with1 part of Crisco shortening and place it on the frame top bars of the bottom hive body, and replace it as soon as it is gone, maybe in October or November. The successful use of grease patties in place of menthol requires their presence in the colony 365 days of the year, even during your nectar flows. Their use is quite labor intensive; but Dr. Diana Sammataro Ph.D. thesis showed that continuous use of plain grease patties pre- vented the extensive breeding of the tracheal mite (but not kill it) so that a colony could survive and function, although not at full strength. Too many beekeepers ASSUME their bees are free of tracheal mites, because they are microscopic and can not be seen; and hence their bees die. Tracheal mites are still out there from Maine to California, so kill them with menthol.

Varroa mites have now been seen by almost everyone (ugly, aren't they); but not everyone has accepted the best TIME or TIMES to treat for them. Worse than that, unfortunately, there are some lazy, know-it-all, hard-headed, socalled "experts" that OVER TREAT with Apistan strips by using too many, or particularly, leaving them in the colony TOO LONG, which is longer than 42 days (6 weeks). As a result, some mites have become resistant to fluvalinate, the active chemical in a Apistan strip, and the strips no longer are effective and the bees die. It is my contention that this beeHAVER (proof he is not a beeKEEPER) killed his bees by not following directions on the label, or what scientists like me have explained ad nauseum. I'll do it again: Varroa mites are MOST active and can produce new mites faster than bees can be produced during the heavy brood rearing time of a colony. Contrary to this, since varroa mite eggs are layed in the late stages of bee larva development and uses this bee larva as food to develop into an adult varroa mite, the most effective time to kill varroa mites so they can't reproduce is when there is no bee larva to serve as their food host. In Maryland, generally the queen is

"taking a break", slowing down her egg laying in October and curtailing all egg laying for about 6 weeks from November 15th to about January 1st. Hence, THIS IS THE BEST TIME TO GET THE MAXIMUM KILL OF VARROA MITES. Therefore, put 4 strips of Apistan (2 in each brood chamber hive body) in your colony on October 1st and REMOVE them after 6 weeks (Nov 12). If it is below 50 degrees on November 12th, the bees are clustered, so wait a few days until it warms and the bees break cluster so it is easy to remove the strips. If you are one of those who can't take time off from work and only do bee work on weekends, perhaps you should not have bees, but you MUST remove those strips even if you have to break the cluster. Not following these directions is UNFAIR to the beekeepers who are acting correctly, because you might be creating resistant mites that can destroy my bees or other duty bound beekeepers. I have been using this treatment of placing my strips in my colonies on October 1st for over 10 years in all of my 100+ colonies in 4 counties and two states, rarely having to ever make any 2nd treatment, and have never lost a colony to varroa mites, so I know that a single 6 week long treatment beginning October 1st and ending about November 12th works very well.

How do I average 132 pounds of honey per colony each year and you don't? Are your bees slightly sick with an upset stomach or loose bowels? How well can you work if you suffer an intestinal upset? Bee researchers and scientists estimate that about 60% of all the hived bees in the country have NOSEMA disease, a gut infection that often appears in the spring after a winter confinement. Although this disease rarely kills a colony, it surely weakens it and shortens the already short 42 day life expectancy of the worker bee. Just one chemical, fumagillin, has been found effective for prevention and control of nosema disease. This is packaged under the name Fumidil-B, and the suggested dose is to feed 2 gallons of 2:1 heavy sugar syrup containing 2 rounded teaspoons of Fumidil-B in the fall. I like to start this feeding anytime after October 1st so the bees will store it away for winter feed and hence get the benefit of being treated almost every day during the winter confinement as they eat this food. It costs about $2.00 per colony per year, and if that keeps my bees from feeling sick so they can collect 132 pounds of honey each spring, then that $2.00 expense turns into many extra dollars of honey receipts.

WEATHER: Forget you anthropomorphic thinking and forget trying to warm a bee hive like you warm your house. Bees have been doing fine when man lived in caves. Your major concerns are WIND and DAMPNESS. Your hives should not be subject to the prevail- ing northwest winds that also bring rain and snow. If they are not already shielded by some natural barrier, make a temporary artificial one with snow fence or something to break down the wind force. Surely, you have entered a long closed up house like a beach house and it felt damp, cold, and dreary; and you remedied that by throwing open the doors and windows and let it "air out". Provide the SAME THING for your bees which are cluster confined in the winter, by providing an UPPER ENTRANCE with a slot in the front edge of the inner cover. Warm air rises and the bee's breath is both warm and damp with moisture, just like yours, so an upper entrance allows hive ventilation letting this damp air escape the colony to outside; and the bees keep warm by clustering rather than having their whole hive interior warm. I do not believe in constricting the bottom board entrance with an entrance reducer or turning the bottom board over,

because I think good ventilation is far more important that reducing entrance space. After all, feral bees living in a hollow tree don't change their entrance space when winter arises. One item often forgotten is to make sure the colony tilts slightly forward, so that rain water does not run in the front door and puddle on the floor.

MICE: In cold weather, what place could be nicer than a nice quiet, dry, wind-free, secure home than a beehive for a field mouse? Further, if the mouse is pregnant, surely she will make her nursery within the protection of hollowed out brood frame. Mice have sharp teeth and can gnaw away wood to enlarge the open space of your wooden entrance reducer to let mice in. I go to the hardware store and buy 1/2" hardware cloth (rat wire), cut a piece to about 14 3/4" long and 2-3" high and staple it with 4 staples to the hive front over the entrance. This allows plenty of space for bees to enter and exit, it breaks up strong wind, and keeps mice out of the colony. These should be put on in October before "mother mouse" starts looking for a nice dry wind-free winter home.

QUEEN EXCLUDERS, BEE ESCAPES, "stupid" BOARDMAN FEEDERS, and other add-ons: None of these should be on a hive during the winter, particularly the queen excluder (that is why mine are painted RED) unless you want a dead queen in late winter as the cluster has move up to get more honey leaving the queen on the wrong side of the excluder. Boardman feeders are absolutely useless in the winter, because bees cannot leave the warm cluster and walk "downstairs" to get some sugar syrup.

Lastly, remove all the weeds, trim the grass, make it look like a well managed apiary, and don't forget to put a brick on the top of each colony to keep a strong wind from blowing their "hat" away. Now go and watch football on TV.